

What's in a Russian aspectual prefix? A cognitive linguistics approach to prefix meanings*

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Abstract. This article analyzes Russian aspectual prefixes from the perspective of cognitive linguistics. First, a general schema is advanced that involves a “trajector”, a “landmark” and a relation connecting the two. Second, it is argued that there are conditions on the trajector involving an “observer” and a “domain of accessibility”, and that the trajector of the prefix is not necessarily the same as the trajector of the verb. Third, landmarks are shown to come in four types, involving the image schemas POINT, LINE, PLANE, and CONTAINER. Fourth, the PATH image schema is demonstrated to represent the prototypical relation between trajector and landmark, although the prefix *po-* represents an important exception from the generalization that prefixes encode a PATH. Fifth, it is shown that motion verbs provide strong empirical evidence for *po-* as a pathless prefix in Contemporary Standard Russian. Finally, it is proposed that the aspectual meaning of prefixes is the result of metaphorical extension of their basic spatial senses. Taken together, the article presents a small inventory of conceptual “building blocks” and advances the hypothesis that these building blocks are sufficient to describe all the meanings of the aspectual prefixes in Russian.

1. Introduction: Problem and Contribution

Few topics have received more attention in Slavic cognitive linguistics than aspectual prefixes, which have been studied extensively from the earliest years of cognitive linguistics (Janda 1986, Dickey 2000, Shull 2003, Janda et al. 2013, just to mention four monographs). Typically, studies couched in cognitive linguistics do not propose single abstract invariant meanings that cover all uses of a prefix, but rather analyze prefix semantics in terms of radial categories, i.e. networks of related submeanings organized around a prototype (Lakoff 1987). The radial category approach has proved fruitful in that it has facilitated tests of important hypotheses such as the Vey/Schooneveld Hypothesis (Vey 1952 and Schooneveld 1958) that no Slavic prefix is semantically empty and the Classifier Hypothesis that Slavic aspectual prefixes are verbal classifiers (Janda et al. 2013, Janda and Dickey 2015). At the same time, the internal structure of each node in the radial categories has received less attention in these studies, and the nodes are typically represented as simple labels, such as APART, CRUSH, and SPREAD (from the analysis of the Russian prefix *raz-* in Janda and Nessel 2010).

The aim of the present study is to complement earlier studies in Slavic cognitive linguistics by zooming in on the content of each node in the radial categories. However, rather than providing detailed analyses of individual prefixes, the problem I address is the general structure of prefix meanings and the semantic “building blocks” that are combined in different ways to produce the various meanings of the Russian aspectual prefixes.

The contribution of my study can be summarized as follows. First, it is shown that a general schema for Russian aspectual prefixes involves three elements that I will refer to

* An earlier version of this study was presented at the conference “Aspect in the Arctic” at UiT The Arctic University of Norway in September 2019. I thank the audience for valuable input. Thanks are also due to members of the CLEAR (Cognitive Linguistics: Empirical Approaches to Russian) research group and JSL’s reviewers for comments on the article. All remaining shortcomings are my sole responsibility.

as “trajector”, “landmark” and “relation”. Second, it is argued that there are non-trivial conditions on the trajector involving differences between verbs and prefixes and the role of an “observer” and a “domain of accessibility”. Third, with regard to landmarks, I suggest they are of four types (POINT, LINE, PLANE, and CONTAINER). Fourth, the PATH image schema is shown to represent the typical relation, although the prefix *po-* is exceptional in that it does not involve a PATH in Contemporary Standard Russian. It is demonstrated that verbs of motion offer strong empirical arguments for *po-* as a pathless prefix.

The present study is organized as follows. After a discussion of a general schema for Russian aspectual prefixes in section 2, we turn to conditions on the trajector in sections 3 through 5 and conditions on the landmark in section 6. Sections 7 through 10 explore the relation between trajector and landmark with special focus on the lack of the PATH image schema in *po-*. The contribution of the study is summarized in section 11.

2. A general schema for Russian aspectual prefixes

By “aspectual prefix” I mean a prefix that changes the aspect of a verb from imperfective to perfective when attached to an unprefixated verb. Thus, if we add the prefixes *na-*, *pere-* or *po-* to the imperfective *pisat'* ‘write’, the result is the perfective verbs *napisat'* ‘write’, *perepisat'* ‘rewrite’, and *popisat'* ‘write for a while’. Notice that I do not limit myself to so-called aspectual pairs such as *pisat'* – *napisat'* where the imperfective and perfective verbs have the same meanings (apart from the aspectual difference). I also consider what Janda (2007) refers to as “specialized perfectives”, such as *perepisat'* where the prefix changes the lexical meaning of the verb, and “complex acts” such as *popisat'*, where the prefix places temporal boundaries on the action described by the verb.

Determining the exact number of aspectual prefixes in Contemporary Standard Russian is a non-trivial question. For instance, while some researchers count *o-*, *ob-* and *obo-* as different prefixes, other scholars argue that they are allomorphs of one prefix (Krongauz 1998: 133-139, Endresen 2014: 102-150). However, this question is tangential to the problem under scrutiny in the present study, and the prefixes listed in Table 1 will form the starting point for my analysis. As illustrated by the examples in the table, all these prefixes are capable of changing the aspect when added to an unprefixated verb. I represent each prefix by its basic allomorph, but indicate that *o-* has variants, since – as mentioned – some researchers consider these variants separate morphemes. In cases where the prefix changes the lexical meaning of the verb, the gloss in the Table is for the perfective verb, which has the most specific meaning.

Prefix	Imperfective	Perfective	Gloss
<i>do-</i>	<i>delat'</i>	<i>dodelat'</i>	‘finish’
<i>iz-</i>	<i>pisat'</i>	<i>ispisat'</i>	‘use up writing’
<i>na-</i>	<i>pisat'</i>	<i>napisat'</i>	‘write’
<i>nad-</i>	<i>pisat'</i>	<i>nadpisat'</i>	‘superscribe’
<i>o(b(o))-</i>	<i>bednet'</i>	<i>obednet'</i>	‘become poor’
<i>ot-</i>	<i>rekomendovat'</i>	<i>otrekomendovat'</i>	‘recommend’
<i>pere-</i>	<i>pisat'</i>	<i>perepisat'</i>	‘rewrite’
<i>po-</i>	<i>pisat'</i>	<i>popisat'</i>	‘write for a while’
<i>pod-</i>	<i>pisat'</i>	<i>podpisat'</i>	‘sign’
<i>pri-</i>	<i>gotovit'</i>	<i>prigotovit'</i>	‘prepare’
<i>pro-</i>	<i>idti</i>	<i>projti</i>	‘walk through’
<i>raz-</i>	<i>kolot'</i>	<i>raskolot'</i>	‘chop up’
<i>s-</i>	<i>igrat'</i>	<i>sygrat'</i>	‘play’
<i>u-</i>	<i>krast'</i>	<i>ukrast'</i>	‘steal’
<i>v-</i>	<i>idti</i>	<i>vojti</i>	‘walk into’
<i>vz-</i>	<i>trevožit'</i>	<i>vstrevožist'</i>	‘worry’

vy-	<i>pisat'</i>	<i>vypisat'</i>	'write out'
za-	<i>pisat'</i>	<i>zapisat'</i>	'write down'

Table 1: Inventory of aspectual prefixes in Contemporary Standard Russian

Is it possible to formulate a general schema, i.e. a template that covers all the prefixes in Table 1? Consider the following simple sentences:¹

- (1) On vošel v komnatu.
'He went into the room.' (Iličevskij 2009)
- (2) On [...] vyšel iz komnaty.
'He went out of the room.' (Belousova 2000)

Both sentences describe two participants, *on* 'he' and *komnata* 'room'. In the same way as Langacker (2008: 70) I will refer to the most prominent participant, the subject *on*, as the "trajector", while the second participant, *komnata*, will be called the "landmark". Both sentences portray a relation between trajector and landmark, and this relation is encoded in the prefix. We can see this by comparing (1) and (2); if we replace *v-* by *vy-*, the result is the opposite relation, where the trajector leaves the landmark rather than entering it. The following schema captures the generalization that prefixes describe a relation between two participants, the trajector and the landmark:

- (3) General schema for Russian prefixes:
Trajector – Relation – Landmark

Besides representing a template for the meaning of prefixes, this general schema has the additional advantage of showing the semantic similarity between prefixes and prepositions.² In (1) the preposition *v* 'in(to)' designates the same relation between trajector and landmark as the prefix *v-*, while the preposition *iz* 'out of' in (2) involves the same relation as the prefix *vy-*.³

Although the general schema in (3) may not be controversial, it raises a non-trivial question: what are the conditions on trajectors, relations and landmarks? This question will occupy us in the remainder of this article. We start from the trajector, which we will explore in sections 3 through 5.

3. Conditions on the Trajector 1: Verbs vs. prefixes

The first condition on trajectors concerns the difference between verbs and prefixes. Consider the following simple example where the prefix *u-* combines with the intransitive motion verb *exat'* 'go (in a vehicle)':

¹ Throughout this article, examples are taken from the Russian National Corpus, available at www.ruscorpora.ru. For examples from fiction, I provide the name of the author, while name of newspaper, journal or internet forum is given for examples from non-fiction. The year of publication is provided for all examples.

² Notice that while the prefixes in Table 1 involve only two arguments (trajectory and landmark), prepositions may involve more than two arguments. For instance, *meždu* 'between' relates three arguments as in *Ne budet li on stojat' meždu mnoj i Aleksandroj?* 'Isn't he going to be standing between me and Alexandra?' (Vodolazkin 2012).

³ For detailed analyses of the relationship between the prefixes *vy-* and *iz-*, the reader is referred to Endresen 2019 and Nessel, Endresen and Janda 2011.

- (4) *Ja uexal v London.*
'I went to London.' (Čukovskij 1953)

The landmark is London, which is the goal of the trip. The trajectory of the verb is the grammatical subject, which represents the primary argument that is assigned the nominative case (Langacker 2008: 210). The prefix *u-* encodes a relation whereby the trajector moves away from its present location and ends up somewhere else, in this case London. Since the grammatical subject *ja* 'I' is the "mover" (the entity that undergoes movement), the grammatical subject is the trajector not only of the verb, but also of the prefix.

Things become more complicated when we consider sentences with three participants:

- (5) *On uvěz menja v London.*
'He took me to London.' (Radzinskij 1999)

The trajector of the verb is still the grammatical subject, since this is the primary participant that receives nominative case. But what is the trajector of the prefix? Is it the grammatical subject *on* 'he' or the object *menja* 'me' that represents the "mover"? The truth value of the sentence depends on whether the object ends up in London, so it stands to reason that the object is the mover and hence the trajector of the prefix. The subject *on* 'he', which we may refer to as the "causer", may of course also end up in London, but this does not affect the truth value of the sentence. The sentence is equally true if the subject (causer) goes back to the place he came from – as long as the grammatical object ends up in London.

Comparison of sentences (4) and (5) shows that the prefix trajector is the subject of an intransitive verb and the object of a transitive verb. To the extent that the intransitive subject aligns with the transitive object, we are dealing with a situation that resembles case-marking in ergative languages. This state of affairs is not restricted to the prefix *u-* and the verb *exat'*, but generalizes to all situations involving movement or transfer and the roles causer, mover and goal. In the following sentence with the verb *prislat'* 'send', the prefix *pri-* denotes the arrival of the mover (trajector) at the goal (landmark). Since it is clearly the letter (the grammatical object) that moves to the editorial office, not Solzhenitsyn, the letter is the trajector of the prefix, while Solzhenitsyn (the grammatical subject and causer) is the verb's trajector:

- (6) *Solzhenitsyn ešče v aprele prislat pis'mo v redakciju.*
'Already in April Solzhenitsyn sent a letter to the editorial office. (Popovskij 1971)

In the preceding example, a prepositional phrase represents the goal (landmark), but the assignment of the trajector is the same in the dative construction, where an indirect object in the dative represents the goal. Clearly, the letter is the mover, and therefore the trajector of the prefix:

- (7) *On prislat mne pis'mo.*
'He sent me a letter.' (D'jakonov 1941-42)

The upshot of this discussion is that verbs and prefixes may have different trajectors. We may formulate the following generalization:

- (8) The verb/prefix trajector condition:
In three participant situations with causer, mover and goal, the grammatical subject is the trajector of the verb, while the prefix trajector is the direct object.

4. Conditions on the Trajector 2: The observer

The next condition concerns the perspective from which the verbal action is viewed. Does the prefix make us view the action from the perspective of the trajector, or are other perspectives possible? As we will see, the answer depends on the prefix.

Consider the following example with the prefix *vy-*, which describes a situation where the trajector moves out of the landmark, in this case a theater:

- (9) Vošël v ložu k samoj zanevesi, tak čto ne videl, byla ona užë v teatre ili net. V pervom antrakte uvidel eë v beloï kosynke na plečax [...]. V vtorom – ne videl, kak ona vyšla v foje.
'I went into the loge by the curtain, so I did not see if she was already in the theater or not. During the first intermission, I saw her with a white scarf over her shoulders [...]. During the second one, I did not see her go out into the lobby.

The narrator is looking at a woman who is seated in another part of the theater, before she goes out into the lobby. We may refer to this as an “internal perspective”, since the observer is located inside the place where the trajector starts his/her movement.

However, *vy-* is also compatible with an “external perspective”, where the observer is placed outside the location where the movement originates:

- (10) On ukrylsja za garažom i videl, kak oxrannik vyšel na kryl'co.
'He hid behind the garage and saw the guard come out onto the porch.' (A. & B. Strugastkie 1966-68)

In this example, the movement starts inside the house, but is viewed from outside. While in (9) the trajector moves away from the observer, in (10) the movement is *towards* the observer, who is standing behind the garage, waiting for the trajector to appear on the porch.

The question now arises as to whether all prefixes allow both internal and external perspectives. The answer appears to be “no”, as shown by the prefix *u-*:

- (11) Ty videla, kak Marik ušël utrom?
'Did you see Marik leave in the morning?' (Sabitova 2007)

Here, an internal perspective is adopted, since we observe how the trajector (Marik) leaves the room where the movement originates. An external perspective seems incompatible with *u-*. The prefix implies that the trajector moves away, i.e. disappears, and therefore sentences where the trajector moves towards an observer appear unlikely for *u-*. This is implied by the traditional label “ablative” that is sometimes used about *u-* (see Luraghi, Naccarato and Pinelli 2020), and the Russian label *proč'* ‘away’ (Zaliznjak 2001).

I suggest that an adequate description of the prefixes *vy-* and *u-* must accommodate the difference that the former is compatible with both an internal and an external perspective, while the latter requires an internal perspective. The schemas in Figure 1 capture this difference. Both prefixes involve the trajector following a path (represented as an arrow) out of the landmark (symbolized as a circle). The schema for *u-* in addition

includes an observer (represented as a face) inside the landmark. For *vy-*, no observer is included in the schema, since as shown in (9) and (10) there is no requirement that a particular perspective is adopted.

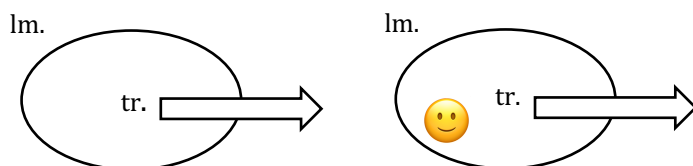


Figure 1: General schemas for prefixes *vy-* (left) and *u-* (right)

To summarize, the comparison of *vy-* and *u-* shows that we need the concept of “observer” in order to provide a complete description of Russian aspectual prefixes:

(12) The observer condition:

The meaning of a prefix may involve an observer that views the movement of the trajector from a particular perspective.

5. Conditions on the Trajector 3: Domain of accessibility

Further comparison of *vy-* and *u-* reveals the relevance of another concept, which I will refer to as “domain of accessibility”. One of the properties of *u-* is that it implies that the trajectory is no longer available once the movement has taken place. The following example illustrates this:

(13) – Muž? Prišël i ušël, i net ego, – skazala ona žëstko.

‘My husband? He came and left, and he is not here, she said harshly.’ (Panova 1958)

Here the implication of the prefix that the trajector (the husband) is no longer available is made explicit, since the verb *ušël* ‘he left’ is followed by *net ego* ‘he is not here’. Here is a parallel example with a metaphorical meaning, where somebody’s youth is gone:

(14) Junost’ užë ušla, eë net [...].

‘Youth is gone already, it doesn’t exist anymore [...].’

Examples like (13) and (14) suggest that *u-* not only means that the trajector leaves the landmark, but in addition that the trajector ends up being unavailable.⁴ No such condition applies to *vy-*:

(15) On vyšël na ulicu, zakuril.

‘He went outside and had a smoke.’ (Marinina 1995)

As in this example, *vy-* is typically used when the trajector ends up just outside the landmark and is still available. In order to capture the difference between the two prefixes, we may include a “domain of accessibility” in the analysis. In the representation of *u-* in Figure 2, the endpoint of the path is outside the domain of accessibility (the dashed oval), thus indicating that the trajector ends up being unavailable. Since *vy-* does not have this feature, the domain of accessibility is not included in the diagram for this prefix.

⁴ Zaliznjak (2001: 75) remarks that to *ujti* ‘walk away’ tends to be used about leaving for a long time (*nadolgo*) or forever (*navsegda*), which she relates to the idea of disappearing from the field of vision (*pole zrenija*). This supports the idea that *u-* implies that the trajector ends up being unavailable.

Notice that the domain of accessibility is not the same as the landmark. Both *vy-* and *u-* indicate that the trajector leaves the landmark, but in addition *u-* states that the trajector is no longer available, i.e. ends up outside the domain of accessibility. In order to accommodate the semantic difference between the two prefixes we therefore need the concept “domain of accessibility” in addition to “trajector” and “landmark”.

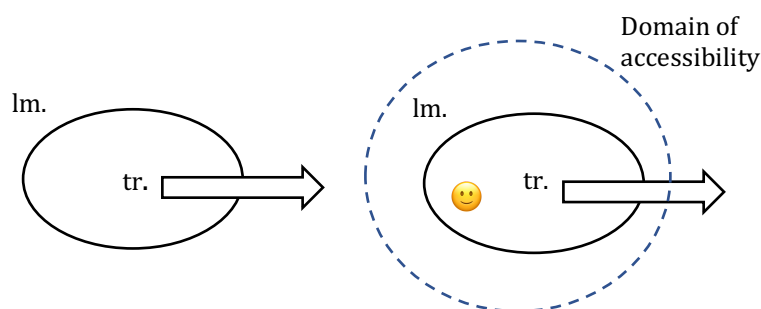


Figure 2: Adjusted general schemas for prefixes *vy-* (left) and *u-* (right)

Domains of the type explored in this section are well known from cognitive linguistics. For instance, in Langacker’s (1993) analysis of possessive constructions in terms of reference points, a “dominion” plays an important role. Langacker’s concept is very close to “domain of accessibility” explored above. In Russian, the domain of accessibility is relevant beyond the analysis of aspectual prefixes. A case in point is negative existential sentences. As shown in Babby’s (1980) seminal analysis, *Ego net doma* describes the non-accessibility of something or someone within a domain, here *doma* ‘home’. Stated differently, negative existential sentences mean that a trajector is outside the domain of accessibility, in the same way as the prefix *u-* indicates movement out of this domain, as shown above.

Summarizing the analysis, we have seen that in addition to an observer discussed in the previous section, we also need a domain of accessibility in order to provide an adequate characterization of the trajector:

- (16) The domain of accessibility condition:
The meaning of a prefix may relate the trajector to a domain of accessibility.

6. Conditions on the Landmark

Conditions also hold for landmarks. I suggest landmarks come in four geometric types, and that a given prefix may be compatible with more than one type. The four types are POINT, LINE, PLANE and CONTAINER, which I will represent in capital letters, since they may be analyzed as image schemas, i.e. abstract prelinguistic structures based on embodied experience (Johnson 1987).

In the following example, the landmark is a POINT, which the trajector moves up to:

- (17) “Kunašir” podošël k točke randevu.
“Kunašir” approached the meeting point.’ (A. & B. Strugackie 1961-67)

The prefix *pod-* can also be used about landmarks that are not points in a literal sense:

- (18) Ja vzjal zerkalo i podošël k oknu.
‘I took the mirror and walked over to the window.’ (I. Tolstoj 2012)

However, while a window can be considered to be a two-dimensional plane (as in *the bird hit the window*) or a three-dimensional area (as in *I was sitting in the window*), for the purposes of *pod-* the window in (18) is just a point in space that the trajector approaches.

The prefix *pere-* provides good illustrations of the image schema LINE:

(19) Načalas' vojna. Vrag perešël granicu.

'The war had started. The enemy crossed the border.' (*Soldat udači* 2004)

Here is an example where the landmark is a PLANE:

(20) Ona ispuganno vyterla slëzy i ogljanulas', no slëzy nabežali snova.

'Scared, she wiped away her tears and looked around, but tears again covered (lit. ran over) her eyes.' (Ketlinskaja 1942)

The prefix *na-* here indicates that the tears covered the surface of her eyes – a (curved) plane in geometrical terms.⁵ Another prefix that is compatible with a PLANE as the landmark is *za-*, as in the following example, where the surface of a street is covered with asphalt:

(21) K priezdu važnoj činovnicy zaasfal'tirovali dorogu.

'To the arrival of an important female bureaucrat the road was covered with asphalt.' (*Russkij reporter* 2013)

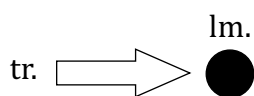
The fourth type of landmark, CONTAINER, is illustrated in examples of the following type:

(22) Spustivšis' vniz, on vošël v komnatu.

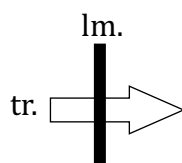
'Having come downstairs, he entered the room.' (Cerniš 2010)

Here, the landmark (the room) is a three-dimensional space, that we for convenience may term CONTAINER.

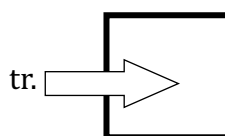
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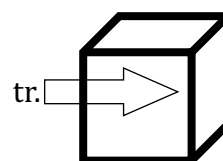
Lm = LINE



Lm = PLANE



Lm = CONTAINER



⁵ *Nabežat'* is a polysemous verb, and as pointed out by an anonymous reviewer, the PLANE image schema may not be equally relevant in all the uses of the verb. The reviewer mentions the following example:

Ja sglotnul nabežavšuju v rot sljunu. (Pelevin 2013)

'I swallowed the saliva that suddenly appeared in my mouth.'

According to the reviewer, the meaning shared by this example and example (20) is "sudden, uncontrolled appearance of something with a point of contact". I agree that a sudden, uncontrolled appearance is an important part of the meaning of *nabežat'*, and I suggest that this part of the meaning is motivated by the base verb *bežat'* 'run', which denotes rapid movement. With regard to the "point of contact", I suggest that this is a surface ("PLANE"), since even in the example with the saliva, the saliva covers the relevant surfaces inside the mouth. However, while one may disagree on the details of the analysis of *nabežat'*, the reviewer brings up an important question: to what extent is the basic spatial meaning of a prefix present in all uses of a prefixed verb? We return to this question in section 9.

Figure 3: Four types of landmarks: POINT, LINE, PLANE, and CONTAINER

The four types of landmarks are visualized in Figure 3. Based on the examples discussed in this section, I suggest the following condition:

(23) The landmark image schema condition:

The landmark of a Russian aspectual prefix is a POINT, LINE, PLANE or CONTAINER.

At this point the reader may ask whether the statement above narrows down the range of possible landmarks; after all, it permits landmarks of from zero to three dimensions. However, there is no limit to the number of distinctions that could potentially be encoded. Potentially, landmarks can be of all sorts and shapes – round, rectangular, curved, small, long, etc. However, the Russian aspectual prefixes do not encode such meanings, but are instead restricted to the four image schemas listed in (23). In doing so, the prefixes observe Talmy's (2000b:25) typological restriction that closed-class items have topological meanings, i.e. meanings that specify basic shapes, rather than other aspects of reality.

Before we leave conditions on landmarks, it is important to point out that a prefix may be compatible with more than one of the four types mentioned in (23). The prefix *o(b)-* illustrates this:

(24) Korolëv spustilsja v pereulok, obošël dom, priblizilsja k musornym kontejneram.
'Korolëv went down into the narrow street, went around the house, and approached the trash cans. (Iličevskij 2007)

While in (24), the landmark (the house) can be construed as a POINT, which the trajector moves around, in (25) the house is arguably construed as a PLANE, that is covered completely by the action, insofar as the subject looks all over the house:

(25) Posle obeda Vasilij Mixajlovič obošël dom, osmotrel. [...] Dom xorošij.
'After lunch Vasilij Mixajlovič went all over the house and inspected it. [...] The house is fine.' (Kara-Murza 1998)

7. Do all prefixes involve a PATH?

In all the examples we have considered so far, the relation connecting the trajector and the landmark has been a PATH. This is no coincidence; Russian is a satellite-framed language (Talmy 2000b: 222), where the PATH image schema is expressed in "satellites" such as prepositions and prefixes. In view of this, the strongest hypothesis we can advance is this:

(26) The PATH hypothesis:

All Russian aspectual prefixes express the PATH image schema.

In the next section, we will see that this hypothesis is too strong. Although the hypothesis captures the typical state of affairs for Russian prefixes, the prefix *po-* is an exception in that it does not encode a PATH. However, before we turn to *po-* in the next section, we will consider some examples with different manifestations of the PATH image schema, that testify to the versatility of this image schema.

Straightforward examples involving the PATH image schema come from verbs of motion, such as prefixations of *idti* ‘walk’ and *bežat’* ‘run’ explored in the previous section. In such verbs, the trajector moves along a PATH. Can we analyze other verbs by means of the same image schema? By way of example, let us first consider the verb *šit’* ‘sew’, which denotes a physical activity, but unlike *idti*, *bežat’* and other motion verbs does not focus on movement from one location to another. If we add the prefix *pri-* to *šit’*, the result is a verb that means ‘attach’:

- (27) Tam že ja prišla k plat’ju belyj vorotničok.
 ‘Right there I attached a white collar to the dress.’ (Petruševskaja 1987)

Here the collar that is attached to the dress follows a PATH onto the dress, which is in accordance with the PATH hypothesis.

Adding *raz-* yields a more substantial change in the lexical meaning of the verb, since *rasšit’* means ‘embroider’:

- (28) Ona [...] rubaxu ne rasšila.
 ‘She [...] didn’t embroider the shirt.’ (Šiškov 1928-33)

Raz- typically denotes movement in different directions from a center (see e.g. Janda and Nessel 2010), and the meaning of *rasšit’* ‘embroider’ is compatible with this meaning, since embroidering involves moving one’s hands in different directions and placing stitches all over a surface. Arguably, therefore, a PATH is part of the meaning of the prefixed verb, as predicted by the PATH hypothesis.

Here is a metaphorical example where *šit’* combines with the prefix *pro-*:

- (29) Čerez tri mesjaca ja vižu v telenovostjax znakomuju mne černuju «Audi», podrobno prošituju puljami.
 ‘Three months later I see on the TV news a black Audi that I recognized, which was **riddled** (lit. “sewn through”) with bullet holes.’ (Saxnovskij 2003)

This prefix has the prototypical meaning ‘through’, thus denoting a PATH from one side to the other of a landmark. Example (29) is compatible with this, since the bullets follow a PATH through the car. (I analyze this as a metaphorical example; although the bullets follow a physical PATH, the PATH does not result from sewing in the literal sense.)

The examples above involve dynamic verbs. Is the PATH image schema also compatible with stative predicates? Again, *pro-* is a good example. If we add *pro-* to the stative predicate *stojat’* ‘stand’, the result is a metaphorical PATH through time:

- (30) Mne povezlo: ja prostojal tol’ko čas.
 ‘I was lucky, I stood there only for (lit. “through”) an hour.’ (*Russkij reporter* 2008)

The stative event of standing is metaphorically construed as a process that follows a PATH through a period of time, in this case an hour.

The prefix *ot-* also illustrates how the PATH gets reinterpreted when it combines with a stative predicate. For the sake of comparison, consider first the following example where *ot-* combines with the dynamic predicate *exat’* ‘drive’:

- (31) Ot’exal ot goroda, ostanovilsja u lesa.
 ‘I drove away from the city and stopped by the forest.’ (Zotov & Šaxmagonov 1977)

The prefix denotes a PATH away from the landmark, in this case a city, and the trajector (the implicit subject of the sentence) moves along this PATH. In the following example, *ot-* combines with the stative predicate *stojat'* 'stand':⁶

- (32) Akademgorodok otstoit ot goroda xot' i ne na čas i vosem' minut.
'The academic town is located not even an hour and eight minutes from the city.'
(Popov 1970-2000)

Since there is no physical movement involved, the PATH is instead interpreted as indicating direction. The sentence prompts us to scan through the PATH from the city to the academic town, as it were measuring the distance from the academic town and the city. In the example, the measurement is in terms of driving time, but the construction is compatible with spatial measurement, say, in kilometers. Examples of this type resemble sentences with endpoint metonymy in English, as in *He lives over the hill* where the focus is on the endpoint of the path (Lakoff 1987: 419). Notice that *otstojat'* is also used about metaphorical distances:

- (33) Odnako sud'ba ego nedaleko otstojala ot sud'by "Van'ka".
'However, his fate was not very different from (lit. "not far away from") that of "Vanek".' (Limonov 1987)

The examples we have reviewed in this section indicate that PATH is a versatile image schema that manifests itself in both literal and metaphorical examples, and combines with both dynamic and stative predicates. While this lends support to the PATH hypothesis, the prefix *po-* represents an exception – as we will see in the next section.

8. *Po-*: a prefix without a PATH?

Dickey (2007: 326, see also Dickey 2011) has argued that the prefix *po-* has changed its meaning from "PATH/SURFACE-CONTACT to INGRESSIVE-PARTIAL TRAJECTORY". For present purposes, it is not necessary to explore the details of Dickey's thorough analysis, but his main point is important: although the meaning of *po-* used to involve a PATH, in Contemporary Standard Russian *po-* is a pathless prefix. In what follows, I will provide an argument in favor of Dickey's analysis that is not discussed in Dickey's articles. The upshot is that the PATH hypothesis discussed in the previous section is too strong, since there is at least one prefix that does not involve the PATH image schema.

The Russian distinction between unidirectional motion verbs such as *idti* 'walk (in one direction towards a goal)' and non-directional verbs such as *xodit'* 'walk' can be analyzed in terms of the PATH image schema.⁷ Since the unidirectional verbs are used about goal-directed motion, it makes sense to say that their meaning contains a PATH, while non-directional verbs lack the PATH image schema in their meaning, since they are used about movement that is not goal-directed (Neset 2008):

- (34) Čtoby uvidet' kenguru, ne nado bylo daže idti v les.
'In order to see a kangaroo, we didn't even have to walk into the forest.' (*Nauka i žizn'* 2008)

⁶ Notice that in the construction in (32) *otstojat'* behaves like an imperfective verb (Zaliznjak 1980), and thus represents an exception to the general rule that adding a prefix to a simplex verb yields a perfective verb. I will not discuss this issue here, since it is tangential to the present study.

⁷ Alternative terms for motion verbs are determinate/indeterminate (e.g., Timberlake 2004) and unidirectional/multidirectional (e.g., Wade 1992).

- (35) Ja xodil po lesu i čustvoval sebja putešestvennikom.
 'I walked around in the forest and felt like an explorer.' (Granin 1966)

While in (34) the subject follows a PATH into the forest, which is the goal of the walk, in (35) the walk takes place inside the forest, not following a particular PATH.

What happens when we combine unidirectional and non-directional verbs with prefixes? In the normal case, the result is a pair of synonymous verbs that differ only in aspect, e.g. *vojti* 'walk into' (perfective) and *vxodit'* 'walk into' (imperfective). We can account for this if we assume that the prefix involves the PATH image schema. The unification of the relevant facets of prefix and verb meanings can be represented as follows:⁸

- (36) Prefixation of unidirectional verb:

v-	+	<i>idti</i>	=	<i>vojti</i> 'walk into' (perfective)
PATH	+	PATH	=	PATH

- (37) Prefixation of non-directional verb:

v-	+	<i>xodit'</i>	=	<i>vxodit'</i> 'walk into' (imperfective)
PATH	+	Ø	=	PATH

In (36), both the prefix and the simplex verb contributes the PATH image schema, and hence the prefixed verb also contains a PATH. In (36), the simplex verb does not have a PATH (as shown by the Ø symbol), but the prefixed verb nevertheless includes a PATH, which it inherits from the prefix. We thus correctly predict that the result is two prefixed verbs that are synonymous since both include a PATH. The only difference between *vojti* and *vxodit'* is that the former is perfective, while the latter is imperfective.

An important exception to the pattern illustrated in (36) and (37) is motion verbs with *po-*. Unlike *vojti* and *vxodit'*, which have the same meaning, the corresponding verbs with *po-* have somewhat different meanings, insofar as *pojti* means 'begin to walk', while the meaning of *poxodit'* can be glossed as 'walk for a while'. Can we predict this outcome by means of the PATH image schema? I argue that the answer is "yes", if we adopt Dickey's (2007) analysis of *po-* as a prefix without a PATH:

- (38) *Po-* and unidirectional verb:

<i>po-</i>	+	<i>idti</i>	=	<i>pojti</i> 'begin to walk' (perfective)
Ø	+	PATH	=	PATH

- (39) *Po-* and non-directional verb:

<i>po-</i>	+	<i>xodit'</i>	=	<i>poxodit'</i> 'walk for a while' (perfective)
Ø	+	Ø	=	Ø

In (38), the unification of the prefix and verb meanings yields a prefixed verb with a PATH, since the unidirectional verb *idti* involves a PATH. In (39), however, the result of the unification process is a prefixed verb without a PATH; since neither prefix, nor simplex verb contains a PATH, there is no PATH for the prefixed verb to inherit.

The upshot of this discussion is simple. We are able to provide a principled account for the unusual properties of motion verbs with *po-* if we follow Dickey and assume that *po-* does not contain a PATH. This suggests that Dickey's assumption is correct, and we

⁸ Notice that I use "unification" in the sense of Sag et al. (1985: 246) about "an operation that does nothing more than to amalgamate compatible partial information and to fail to amalgamate incompatible partial information."

thus have a strong argument in favor of the analysis of *po-* as a pathless prefix. Thus, the PATH hypothesis discussed in the previous section is too strong, insofar as there is at least one exception to the idea that all prefixes involve the PATH image schema.

9. Dichotomy or continuum?

The analysis of *po-* as a pathless prefix raises an important question: to what extent is the basic spatial meaning of a prefix present in all uses of a prefixed verb? Are we dealing with a dichotomy, whereby spatial image schemas such as PATH are either present or absent? Or should we rather construe the situation as a continuum which spans from cases where the spatial image schemas are clearly present, through examples where the spatial meaning is attenuated, to the limiting case of *po-* where the PATH image schema is completely absent, as argued above? In keeping with basic tenets of cognitive linguistics (Langacker 2006), I propose that a continuum represents the more realistic model.

The clearest cases for PATH and the other spatial image schemas explored in this article (POINT, LINE, PLANE, CONTAINER) come from verbs of motion used in their literal senses. Thus, in *On vyšel iz komnaty* 'he went out of the room' the trajector (*on* 'he') follows a physical PATH out of a physical CONTAINER (the landmark *komnata* 'room'). For this reason, examples with verbs of motion are numerous in the present study.

The spatial meaning of a prefix can be attenuated in numerous ways, some of which have been touched upon earlier in the article. One factor is metaphor, mentioned in section 7. Arguably, a metaphorical PATH is less salient than a literal PATH. Thus, the PATH may be attenuated in the metaphorical example *vyjti iz upotreblenija* 'go out of use' compared to the literal *vyjti iz komnaty* 'go out of a room'. The PATH may be even less salient in verbs such as *vyzdorovet'* 'recover (from illness)', where a person follows a metaphorical PATH out of an illness. While *vyjti* 'go out' has both literal and metaphorical uses, the PATH in *vyzdorovet'* 'recover' is always metaphorical, which may make the PATH image schema a less salient part of the meaning of *vyzdorovet'* than of *vyjti*.

A second factor that may attenuate the PATH meaning of a prefix is so-called fictive motion (Talmy 2000a: 99) as in *doroga vyxodit iz kotloviny* 'the road goes out of the valley'. Here, a motion verb is used although the situation described is static. The fact that the road does not go anywhere in a literal sense, may make the PATH meaning less salient compared to examples with literal movement.

The attenuation of the PATH meaning may result from its interaction with other semantic elements in the meaning of a verb. The combination of directional prefixes with stative verbs, discussed in section 7, is a case in point. For instance, the combination of *vy-* with the stative verb *stojat'* 'stand' may lead to the construal of an arguably attenuated metaphorical path through time, as in *vystojat' dva časa* 'stand for two hours'.

Another potential source of attenuation of the PATH meaning is the interaction between the verb and other constituents of the sentence. Consider the verb *vypit'* 'drink', where the liquid one drinks follows a PATH out of a CONTAINER, as in *vypit' kofe iz čašečki* 'drink coffee from (literally "out of") a small cup'. Here, the prepositional phrase, which describes movement out of a source, arguably makes the PATH meaning more salient, while the PATH is attenuated in sentences without the prepositional phrase, e.g. *vypit' kofe* 'drink coffee'.

This discussion of mechanisms that may attenuate the meaning of spatial image schemas such as PATH is not meant to be exhaustive. However, it suffices to show that a dichotomous model whereby a spatial image schema is either present or absent in the meaning of a prefixed verb is overly simplistic. A more realistic model involves a continuum where a spatial image schema may be attenuated to various degrees. More

research is needed in order to work out the details of this continuum model, but this topic is beyond the scope of the present study.

10. Where is aspect?

Throughout this article I have used the traditional term “aspectual prefix”, although the analysis has not had much to say about aspect as such. What is the relationship between the prefix meanings we have considered and the category of aspect? I propose that the aspectual meaning is the result of metaphorical extension from the basic spatial meanings of the prefixes.

Since the addition of a prefix to a simplex verb is the prototypical way of forming a perfective verb in Russian, we will be concerned with the perfective aspect, which has often been characterized as involving a change of state. Classic examples include Bondarko’s (1996) idea that perfective verbs express the “emergence of a new situation” (“*vozniknovenie novoj situacii*”) and Padučeva’s (1996 [2010]: 85-88) similar characterization of perfective as involving the “onset of a new state” (“*nastuplenie novogo sostojanija*”, see Zaliznjak and Šmelev 2000: 34-35 for discussion).

In cognitive linguistics, change of state has been analyzed as a metaphorical extension from movement in space, e.g. the event structure metaphor of Lakoff (1993: 220). I suggest that the Russian prefixes invoke a version of this metaphor:

(40) The metaphor of perfectivizing prefixes:

A CHANGE OF STATE IS MOVEMENT ACROSS A BOUNDARY.

With the exception of *po-*, we have seen that the meaning of prefixes involves a PATH in combination with one of the four image schemas POINT, LINE, PLANE, and CONTAINER that represent the landmark. Typically, the landmark defines a boundary that the PATH crosses. For instance, in sentences like *on vošel v komnatu* ‘he walked into the room’ (see example 21 above), the prefix describes a PATH into a CONTAINER, i.e. a PATH that starts outside the CONTAINER, and ends up inside it. I submit that movement following a PATH that crosses a boundary defined by a landmark represents the prototypical metaphorical motivation for the perfective aspect in Russian.

I hasten to add that the epithet “prototypical” is important here. I do not claim that the metaphor in (40) motivates all uses of perfective verbs in Russian. Importantly, while CONTAINER, PLANE and LINE involve boundaries that can be crossed, POINT is arguably not compatible with the idea of crossing a boundary. Furthermore, Russian has atelic perfectives such as *poxodit’* ‘walk for a while’ and many other verbs with the pathless *po-* prefix. Such verbs arguably do not involve a change of state. Nevertheless, it stands to reason that change of state represents a prototypical meaning of the Russian perfective that is straightforwardly motivated through the metaphor in (40).

Does Russian have “aspectual prefixes”? If we follow the logic of the analysis developed in the present study, the prefixes in question primarily express spatial meanings. Aspect is subsidiary in that aspectual meanings emerge from the metaphorical interpretation of spatial movement as change of state. The prefixes are aspectual, but only as a side effect of their basic spatial meanings.

11. Concluding remarks

In this article, I have discussed the meanings of the Russian aspectual prefixes. My contribution can be summarized as follows. First, I have shown that a general schema for prefixes involve three components, viz. a trajector, a landmark, and a relation connecting

trajector and landmark. Second, I have suggested that verbs and prefixes may have different trajectors, and I have advanced conditions on trajectors, involving an “observer” and a “domain of accessibility”. Third, it has been argued that landmarks come in four types: POINT, LINE, PLANE, and CONTAINER. Fourth, I have proposed that PATH represents the prototypical relation between trajector and landmark, but that *po-* is an exception, which does not involve a PATH in Contemporary Standard Russian. Fifth, I have shown that verbs of motion provide strong empirical arguments for *po-* as a pathless prefix. Finally, it has been suggested that the aspectual meaning of the prefixes is the result of metaphorical extension from the basic spatial meanings.

Although the present article does not offer detailed descriptions of individual prefixes, it gives a small set of “building blocks” that can be combined in various ways in order to derive all the individual meanings of the Russian aspectual prefixes. In (41), the relevant concepts are located according to which part of the general schema for prefixes they relate to (trajector, relation, or landmark):

(41) Inventory of semantic “building blocks” for Russian aspectual prefixes

Trajector:	Relation:	Landmark:
Observer	PATH	POINT
Domain of accessibility		LINE
		PLANE
		CONTAINER

The strongest hypothesis one can adopt is that the inventory in (41) is sufficient to analyze all meanings of all Russian aspectual prefixes. However, further investigation of this hypothesis must be left for future research.

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